

The Dilemma of Dealing with a Silent Enemy

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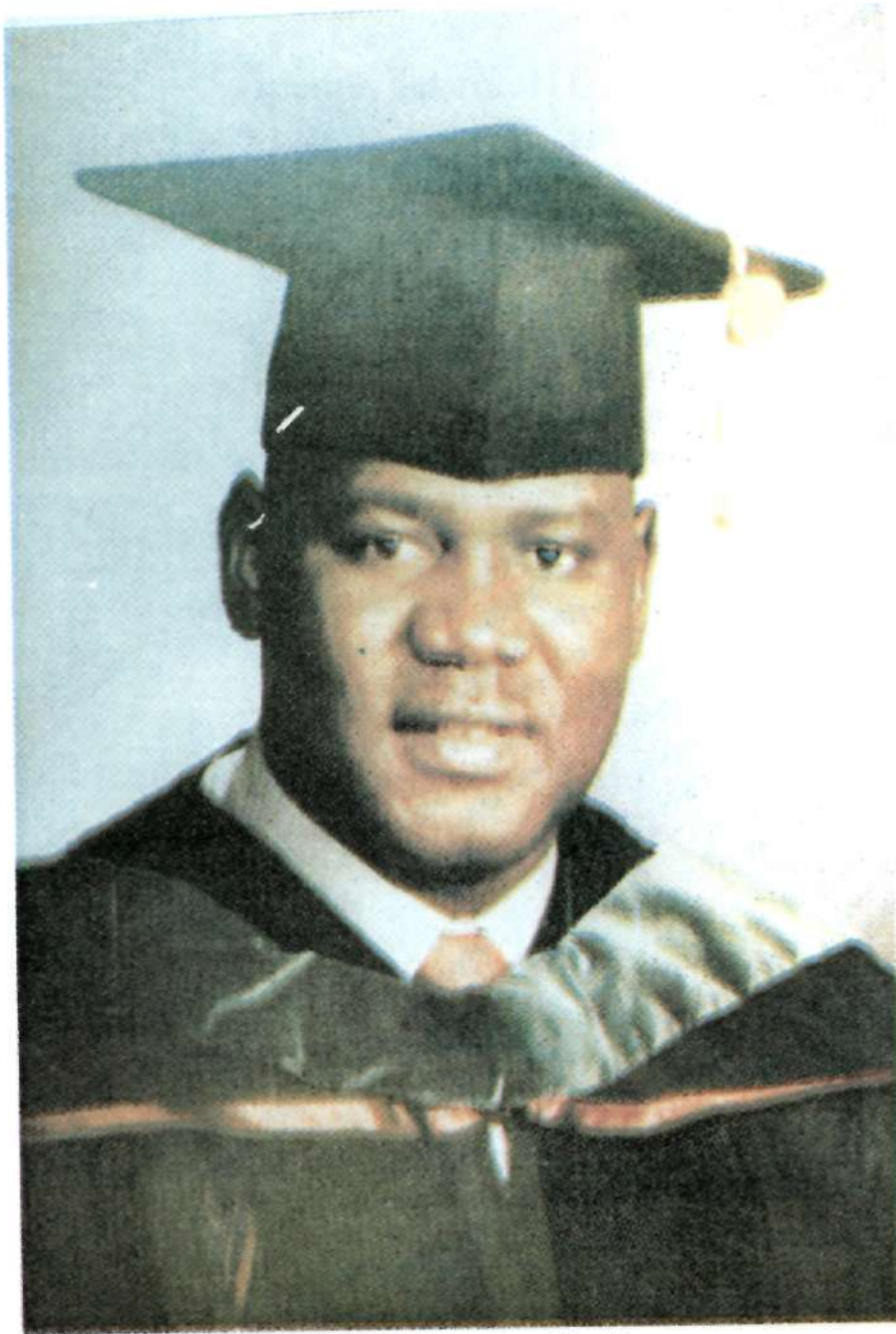
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Acknowledgements

I am most grateful to the Vice Chancellor of this great University, ABU Zaria, Professor Abdullahi Mustapha and the University organized lectures committee of ABU for this rare opportunity to deliver an Inaugural lecture. This is a chance for me to share some of my activities and modest contribution to my chosen field of endeavour.

I want to appreciate members of my Department, the Dept of Medicine, from my first encounter as a Medical Student in 1987, through my early postgraduate training to the present time. One cannot forget the names of Professor G.C Onyemelukwe(MON), Professor Adesanya, Professor CU Abengowe, Professor JU Okpapi, Professor Abdu-Aguye, Late Professor Onyewotu, Professor Lege Oguntoye, Professor AG Habib, Professor SS Danbauchi, Dr CN Ekweani, Dr CA Anyiam, Dr Mansur Kabir, Dr AI Dutse, Late Dr K Abdu-Gusau and a host of others too numerous to mention. You have all inspired me and contributed to the reality of today.

My colleagues now in the Department have been very supportive and understanding, My Head of Department and Dean Dr AG Bakari has been a wonderful brother and friend. I want to specifically appreciate the support and understanding from all members of the Department of Medicine.

I would like to appreciate key people who touched my life and contributed to my academic career outside ABU. Professor Falase, Professor Onadeko both from UCH Ibadan, Professor Obasohan AO from UBTH Benin City, Dr Yahaya Hashim and Dr Judith Ann Walker both of development research and projects consortium (dRPC), Kano, Ms Sandra McIntosh from the University of Witwatersrand, South Africa where I went for the 'Methods Course' in 2005, Professor Navin Nanda, Director of the Heart Station in the University of Alabama, USA, where I did my visiting fellowship, Dr Sunil Mankad of the Mayo Clinic, USA. Professor KK Kapoor, Director of Non invasive cardiology at Apollo Hospital, India, Professor NN Khanna, Director of Vascular & Interventional Cardiology at Apollo Hospital, India, and Dr Alan Graham Stuart, Director of the Bristol Heart Institute, Bristol, UK.

I want to thank my patients from my first day in the hospital as a medical student to date. I am dedicating this lecture to all of you.

I want to thank my dear Family of Formation and of Procreation, my late Parents for all you have done to guide me through the most difficult path of early life. My brother Alhaji Sani Ali Garko, Sisters, other brothers, I am grateful. My immediate family have always been there and the kids have been wonderful friends at home.

I want to thank the almighty ALLAH for HIS mercy, guidance, protection and for making today to be part of my life.

Thank you.

I have been accused of many other things, but the views of others have never made me deviate from the path which I am certain is the one which will benefit my people and country. I have always based my actions on my inward convictions, on my conscience and on the dictates of my religion.

**Late Sir Ahmadu Bello,
Sardauna of Sokoto
1960**

It is a great honor to stand before you today to give this inaugural lecture on behalf of my department. The department of medicine, in the faculty of medicine. I must appreciate the dean, Dr. A.G. Bakari who nominated me on behalf of the faculty.

The last inaugural lecture given by my department was in 1996/97 by Prof. G. C. Onyemelukwe, my teacher and great mentor. I am therefore highly honored to follow in the footsteps of this great teacher so soon.

Mr Vice Chancellor Sir, distinguished guest, the title of my lecture may sound combatant, it is not meant to be so. The title was arrived at considering the issues I intend to discuss in terms of health and disease. It is common place to hear that this person died suddenly, that person developed a stroke suddenly, this person was well, and suddenly the doctors have told him he has a terminal disease. As a physician and a cardiologist, my practice has been shaped by experiences that would help us greatly in understanding some of these issues.

Mr. Vice Chancellor Sir, the topic for today evolves over a period of time through very tough and difficult process of selection of a topic that would reflect my thoughts over the years. I had thought of topics as *"the Scourge of a silent killer in an under-developed economy"*, *"the Emergence of Cardiovascular disease epidemic in developing countries"*, *"the challenges of managing cardiovascular disease in Nigeria-on being the doctor"* among others. I decided to present the topic as **"THE DILEMMA OF DEALING WITH A SILENT ENEMY"** not because it is a better title, but because I believe it will arouse our curiosity and stimulate our appetite to listen to what may be the contents of this talk today.

Mr. Vice Chancellor Sir, and distinguished listeners, I intend to take us through some select cardiovascular conditions and try to share the little I know about the challenges they pose both to the doctor and to the patient in Nigeria-where I trained and practiced.

The spectrum of cardiovascular disease that are of interest in this regard is wide, but I intend to restrict myself to:

1. Hypertension and its complication
2. HIV/AIDS and heart disease and
3. Heart disease of interest- PPCF and Takotsubo cardiomyopathy.

I implore you to follow me through as I share some of my experiences on these topics

1. Hypertension And Its Complications

Hypertension:

Hypertension, also known as high blood pressure, literally means a rise in the pressure (force) of circulating blood through our body. For us to remain healthy and grow, we need to nourish all parts of us. This is achieved by a network of pipes that carry blood all around our bodies and a return pipes that returns it to the central pump. This pump is the heart. The heart is endowed with the ability to initiate contraction independent of our state of mind in order to pump blood to the lungs to get oxygen and then pump the blood that has collected oxygen to the rest of the body. Oxygen is the gas needed for the body to be energized. The reason why I said, independent of our state of mind is that every part of the heart is capable of initiating and sustaining a heartbeat. As such Mr chairman people may go on hunger strike, may do a 'stay at home' strike, BUT NEVER 'stop the heart' strike, this is beyond the human ability, and I believe God, knowing the human mind, makes the working of the heart to be out of his control. The heart is wired with a special conducting system that discharges and initiates contraction. There are areas with different frequencies of discharge within the system with an inherent ability to inhibit each other, so that only the fastest determine heart rate at any given time. The heart beats about 60-100 times per minute and this beating starts from the womb and will only stop completely for a reasonable period after the organism is no longer living. The heart beats about 100,000 times a day, and about 3,000,000,000 times in an average lifetime.

As we all know, any pressure pump need a regulator just like injectors in our vehicle that are regulated by the amount of pressure on the throttle, which in turn determines whether we speed or go slowly. The heart and the blood vessels operate in such a way that all sizes of pipes and structures are perfused at a pressure that is not harmful to them. This is achieved by a complex regulatory mechanism. For example, if somebody is scared, the heart beats rapidly, the small blood vessels become smaller and blood is pushed to the brain, the eyes, and the muscles. This is to enable the body to function optimally for escape or to fight. This response is called the

'fight or flight' response. This is what is responsible for individuals achieving a feat that may appear extraordinary. At this point, that much blood is pumped to the organs, the heart rate rises. By simple arithmetic of pressure being equal to force per unit area, the pressure rises and because the unit area in question is the cross sectional area of the blood vessel whose only variable is the radius.

Thus:- Borrowing from physics,

$$P = \frac{\text{force}}{\text{Area}}$$

$$BP = \frac{SV * HR}{\pi r^2}$$

SV = The amount of Blood pushed out at each heart beat

HR = the heart rate-number of heart beat per minute

π = constant

r = radius of the blood vessel

Thus, in the event of excitement, fear or stress, the pressure of blood flowing through our blood vessels rise. This rise is directly proportional to the heart rate, and stroke volume, and is inversely proportional to the radius of the blood vessel. From the above, you will agree with me that hypertension or high blood pressure is not necessarily a disease on its own. This is because, this transient rise in pressure will disappear as soon as the precipitant is removed.

When does a high blood pressure becomes a disease?

High blood pressure is defined as a sustained elevation in systolic blood pressure, diastolic blood pressure or both. Systolic blood pressure is the maximum force of blood in the arteries as the heart beats. Diastolic blood pressure is the force of blood in the arteries as the heart relaxes between beats.

A consistent reading of 140mmHg systolic and 90mmHg diastolic or higher is considered hypertension.

It is important that BP should be checked, on at least three separate consecutive occasions one week apart before a diagnosis of hypertension is made.

A patient presenting with known complication of hypertension or a history of being on drugs for hypertension may also be diagnosed hypertensive even if the BP is less than 140/90mmHg. When a patient present in heart failure - a condition

whereby, the heart is unable to pump blood at a sufficient pressure to ensure adequate tissue perfusion- the BP may be high, normal or even low. Thus, it is important to evaluate the patient making sure that other signs of long standing hypertension are absent before concluding that BP is normal.

Measuring Blood Pressure.

Blood pressure should be measured with the patient in a relaxed environment and the BP machine should be well maintained and properly calibrated.

In addition the following criteria should be observed for optimal records.

- i. Measure sitting BP and additional standing BP in elderly and diabetics and those on anti-hypertensive therapy.
- ii. Remove tight clothing from the arm.
- iii. Support arm at the level of the heart.
- iv. Use appropriate cuff size – bladder must encompass 2/3rd of arm.
- v. Lower the mercury slowly.

The main problems with measuring BP are the technical errors and observer errors. It is always advisable; to have one person measures blood pressure. Reason being that observer error will be constant and thus insignificant. This means that the observer error will be constant, and with repeated measurement, a trend will be established.

Ambulatory and Home B.P Monitoring

This is recommended when we encounter any of the following conditions:-

- i. Unusual variability of BP.
- ii. White coat hypertension in people with low overall cardiovascular risk.
- iii. Symptoms suggesting hypertensive episodes.
- iv. Non-response to treatment of BP.

Casual BP - refers to BP recorded under ordinary condition in the physician office.

Basal BP -refers to reading obtained under condition of optimal physical and emotional relaxation such as in the patient's home.

Home blood pressure(Basal) measurements have been shown to be lower than readings obtained in the clinics(Basal) by several mmHg.

Repeated BP measurements will determine whether initial elevations persist and required close observations or whether they have returned to normal and need only periodic measurements.

Classification of Blood pressure levels.

Category	Systolic BP (mmHg)	Diastolic BP (mmHg)
Optimal BP	<120	< 80
Normal BP	<130	<85
High-Normal	130-139	85-89
Grade 1 Hypertension (Mild)	140-159	90-99
Grade 2 Hypertension Moderate)	160-179	100-109
Grade 3 Hypertension (Severe)	≥180	≥ 110
Isolated Systolic hypertension	≥ 140	< 90

NB: when sBP and dBP fall into different categories the higher category should apply.

Causes of Hypertension

Hypertension in most people results from interplay between genetic and environmental factors. The factors that have been known to influence the development of blood pressure include:-

- i. Hereditary
- ii. Age
- iii. Salt intake
- iv. Obesity
- v. Physical inactivity
- vi. Excessive alcohol intake
- vii. Stress
- viii. Low potassium intake
- ix. Low vegetable or fresh fruit content in the diet
- x. High saturated fats contents in the diet

Some reports had identified additional risk factors in Nigerians and these include:-

- High and low socio-economic status

- High education level
- High income

Hypertension has no known cause in up to 98% of people who suffer from it. This is sometimes referred to as essential (primary) hypertension. This is where the genetic/ environmental interactions is implicated.

The remaining 2% cases of hypertension has a cause, and this is called secondary hypertension-See Figure I

The causes of Hypertension

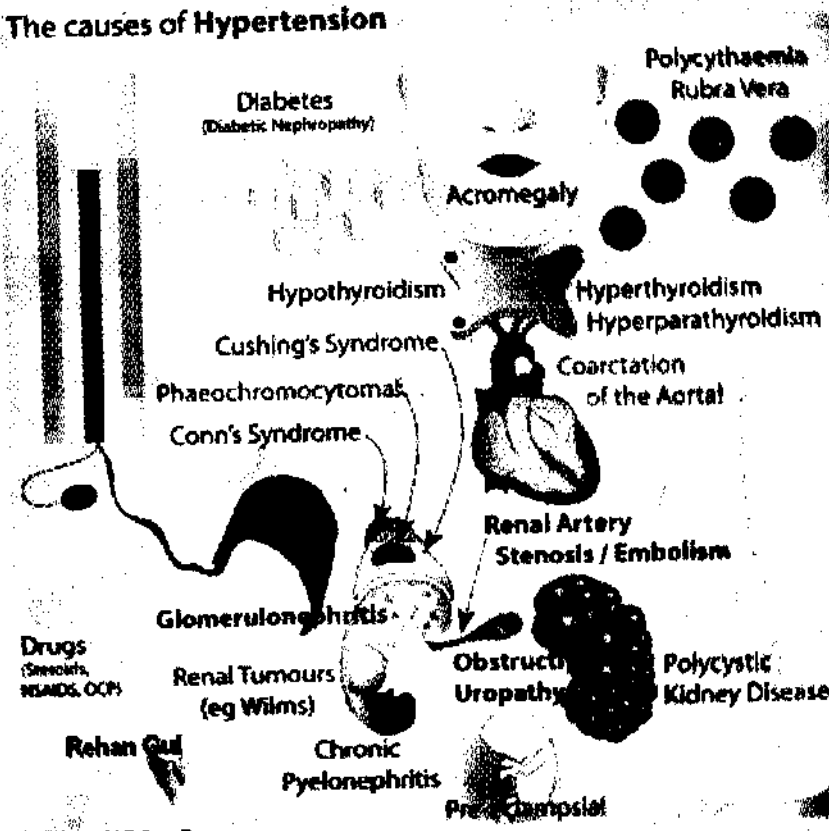


Figure I- Causes of secondary hypertension

Complications of Hypertension

The severity of complications is related to the height and duration of hypertension. Untreated long standing hypertension causes serious

complications in three important vital organs (commonly referred to as target organs) **Heart, Brain and Kidney**.

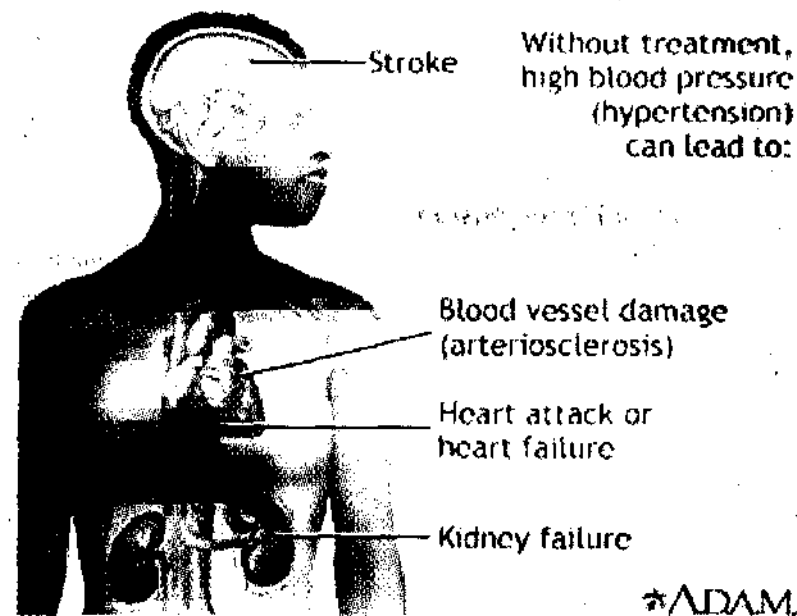


Figure 2- Complications of Hypertension

Elevated BP imposes excessive work on the myocardium and damages systemic arterial vasculature.

Hypertension affects the blood vessels in the body. Large arteries, small arteries and arterioles, are not spared. The consequences are arteriosclerotic changes in large arteries and thickening of the walls of small arteries and arterioles.

Heart – The coronary arteries may be damaged and/or blocked, resulting in angina pains or heart attacks. The left ventricle may fail to perform its pumping function (LV failure)

The great vessels may be involved with Aortic aneurysm or Aortic dissection.

There may be uncoordinated beating of the heart (referred to as arrhythmias), this may result from dilated heart chambers especially left atrium or from damage to the conduction system in the heart.

Brain and Nervous System.

The Brain and nervous system is affected because elevated BP breaks down the normal cerebral auto regulation. Normally, when BP rises, cerebral arterioles vasoconstrict and cerebral blood flow (CBF) remains constant.

In hypertensive emergency, the elevated BP overpowers arteriolar control and auto regulation of CBF, this results in transudates leak across the capillaries and continued arteriolar damages with consequent cerebral edema. This lead to cerebral malfunction referred to as encephalopathy. In the event of this happening, the patient may present with:-

- Vomiting, headache, convulsion (seizure), loss of consciousness and focal neurologic deficit like hemiplegia, blindness, aphasia and papilledema.

Kidneys

Damages to small arteries and arterioles in the kidney lead to malfunction of the kidneys manifesting as leakage of proteins and other vital components of the blood in urine.

This result is progressive renal failure, end stage renal disease and nephrosclerosis.

Kidneys may also be damaged from drugs taken for various ailments sometimes even to treat the hypertension itself. The challenge is that kidney damage often time does not manifest till it is late.

Management of Hypertension

The most important step in proper management of hypertension is proper evaluation of the patient including adequate history, physical examination and laboratory tests. The overall cardiovascular risk should be assessed including determining target organ damage and presence or absence of co-morbid conditions. Hypertension management must be individualized as much as possible.

The overall strategy for optimum management of hypertension should include:-

- i. Determination of the level of cardiovascular risk
- ii. Lifestyle measures should be offered to all patients and
- iii. The decision to initiate drug therapy must be made according to laid down guidelines and in consultation with the patient.

The lifestyle measures that have been shown to reduce BP include:-

- Reduction in salt intake
- Weight reduction
- Increased physical activity
- Moderation in alcohol intake - *indeed for African heart that is prone to hypertensive heart failure- a mechanical failure- any amount of alcohol has been shown to be detrimental.*
- Increase in dietary potassium intake and
- Intake of diet with increased fresh fruits and vegetables and reduced saturated fat intake – DASH diet

Lifestyle measure are less expensive than drug therapy, they are without adverse effects and it improves the sense of wellbeing of the patient.

The primary goal of treating hypertension is to achieve the maximum reduction in the total risk of cardiovascular disease. This requires that, apart from treating the BP, all identified modifiable risk factors must be addressed.

The hypertension optimal treatment trial (HOT) showed significant reduction in mortality when BP was reduced to levels below 140/90mmHg. In patients who have diabetes and renal disease, the BP should be reduced to below 130/80mmHg.

Prevention of Hypertension

This can be achieved at various levels.

Primordial prevention: - This is aimed avoiding those social, economic and cultural patterns of life that have been shown to contribute to the high incidence of the disease.

Primary prevention: - This is aimed at reducing or modifying risk factors already present in the individual and the community and forestalling the development of overt disease.

Secondary and Tertiary prevention: - these involve the management of the disease and complications of the disease.

Cardiovascular disease risk factors in Nigeria

There had been so many studies on hypertension in Nigeria, putting the prevalence of hypertension at 10-12% in 1991 (Non communicable disease study, FMOH). Some studies got prevalence of hypertension as high as 30%.

We studied the prevalence of risk factors for cardiovascular disease among apparently healthy Hausa Fulani Nigerians. The study was to compare and contrast between residents of an urban and a rural area. A total of 276 subjects were recruited for the study, [138 from the urban and 138 from the rural areas].

Cigarette smoking and alcohol intake were found to be uncommon among the elderly Hausa-Fulani population. The women were found to be largely inactive [sedentary] whereas the men, both urban and rural were found to be physically more active than the women, especially in the rural areas. The mean fasting plasma cholesterol for the study population was 4.74 ± 1.32 mmol/L and the mean total triglycerides was 1.70 ± 0.58 mmol/L. The mean total fasting plasma glucose was 4.08 ± 1.58 mmol/L. Two (2=0.7%) subjects were found with overt diabetes and 10 (3.6%) subjects had fasting total cholesterol greater than 6.2 mmol/L. There was no significant difference between the mean diastolic blood pressures of the urban and rural areas, but the systolic and mean blood pressures differ significantly.

There is a significant correlation between blood pressure [systolic and diastolic], age and physical activity among the study subjects.

A more significant cluster of CVD risk factors was seen among the urban subjects whereas the women had a more significant cluster of the risk factors [high blood pressure, obesity, increased fasting plasma glucose, and family history of hypertension, stroke or diabetes] compared to the men. It is therefore suggested that physical activity, weight reduction and

dietary advice among the susceptible urban and rural elderly population, particularly post menopausal women should be encouraged.

Below is a summary of our findings from the study.

1. **Age:** The subjects were grouped into three age categories: 55-59, 60-64 and 65 years and over. Of the 276 subjects studied, 98[35.5%] were aged 55-59 years, 68[24.6%] were aged 60-64 years while 110 [39.9%] were aged 65 years and over. Seventy eight women were studied, 35 [44.9%] were aged 55-59 years, 18[23.1%] were aged 60-64 years and 22 [28.2%] were aged 65 years and over. A total of 198 men were studied, 63[31.8%] were aged 55-59 years, 50[25.3%] were aged 60-64 years and the rest 88[44.4%] were aged 65 years and over.

There were similar age distributions between the men and women such that age should not therefore compound the interpretation of the differences in the results between the two sexes.

A total of 138 subjects were studied in each area [urban and rural] and the percentage distribution within the three age groups was similar.

2. **Physical Activity:** 29% of the study subjects were sedentary while 71% were non-sedentary. 14% and 67% of the men and women respectively were sedentary, while 86% and 33% of men and women respectively were non-sedentary. This indicates that the women had greater tendency towards increased physical inactivity compared to the men. The physical activity rating also showed that 30% and 28% of urban and rural subjects respectively were sedentary while 70% and 72% of urban and rural subjects respectively, were non-sedentary. These levels of physical activity showed a slightly greater tendency towards physical activity in the rural subjects compared to their urban counterparts.
3. **Cigarette Smoking:** Only 2 subjects each from the urban and the rural areas admitted being smokers. This constitutes 1.4% smoker prevalence in both urban and rural areas.

4. **Alcohol Intake:** None of the subjects studied admitted consumption of any form of alcoholic beverage. This may have to do with cultural and religious practices of the study population.
5. **Family History of Hypertension:** 17 [6.2%] of the studied subjects were aware of hypertension cases in their first degree relatives. 14[7%] men and 3[1.8%] women had positive family history of hypertension. 10[7%] and 7[5%] of urban and rural subjects respectively had positive family history of hypertension.
6. **Family History of Diabetes:** Only 5 [1.8%] of the studied subjects indicated a positive family history of diabetes. 3[1.5%] men and 2[2.6%] women were aware of a first degree relative who is diabetic. 2.2% and 1.4% of the urban and rural subjects respectively had a positive family history of diabetes.
7. **Family History of Stroke:** 12[4.3%] of the entire subject had a family history of stroke. 9[4.5%] men and 3[3.8%] women had a family history of stroke. 5.1% and 3.6% of the urban and rural subjects respectively had a family history of stroke.
8. **Family History of Sudden Death:** 9[3.3%] of the study subjects admitted a family history of sudden death. 8[4%] men and 1[1.3%] woman had a positive family history of sudden death. All the subjects with a family history of sudden death were from the rural area.

Table 1:

Prevalence of Non-Quantifiable CVD Risk Factors

RISK FACTORS	ALL n=276 (%)	MALE n=198 (%)	FEMALE N=78 (%)	URBAN n=138 (%)	RURAL N=138 (%)
Cigarette	4 (1.4)	4 (4.2)	0	2 (1.4)	2 (1.4)
Alcohol	0	0	0	0	0
FHx Hypertension	17 (6.2)	14 (7.1)	3 (3.8)	10 (7.2)	7 (5.1)
FHx Diabetes	5 (1.8)	3 (1.5)	2 (2.6)	3 (2.2)	2 (1.4)
FHx Stroke	12 (4.3)	9 (4.5)	3 (3.8)	7 (5.1)	5 (3.6)
FHx Sudden Death	9 (3.3)	8 (4.0)	1 (1.3)	0	9 (6.5)
Physical inactivity	80 (29.0)	29 (14.1)	52 (66.7)	41 (29.7)	39 (28.3)
Sedentary					
Non-Sedentary	196 (71.0)	170 (85.9)	26 (33.3)	97 (70.3)	99 (71.7)

Age Category	98 (35.5)	63 (31.8)	35 (44.9)	49 (35.5)	49 (35.5)
55 – 59 Years					
60 – 64 Years	98 (24.6)	50 (25.3)	18 (23.1)	33 (23.9)	35 (25.4)
65 Years and over	110 (39.9)	88 (44.4)	22 (28.2)	56 (40.6)	54 (39.1)

Table 1 shows the prevalence of non-quantifiable risk factors among the study subjects.

Prevalence of Quantifiable CVD Risk Factors In The Study Population [Table 2 And 3]

- Hypertension:** Most of the subjects were non-ostensive. However, some overt hypertensive was seen. Of the 276 subjects studies, 53 [19%] had borderline hypertension, 21[7.6%] had mild hypertension, 13[4.7%] had moderate hypertension and 3[1%] had severe hypertension. All the 3 subjects with severe hypertension were females from the rural area. 20[10%] of the males had mild to moderate hypertension while 14[17.9%] of the women had mild to moderate hypertension.
- Obesity:** Though the mean BMI [+SE] value for all the subjects is 22.81 + 3.53, 6[2.2%] subjects were obese. 2[1%] men and 4[5%] women were obese. 4[2.9%] and 2[1.4%] urban and rural subjects respectively were obese. Of the 10[3.6%] men who were overweight, 4[2.9%] and 6[4.3%] reside in the urban and rural areas respectively. 11[8%] of the 17[6.2%] women who were overweight are from the rural area whereas the rest 6[4.3%] reside in the urban area.
- Truncal Obesity:** 44[31.9%] of the 77[27.9%] men who were truncally obese were from the rural area and the rest 33[23.9%] reside in the urban area. Furthermore 40[29%] of the 67[24.3%] women who were truncally obese reside in the rural area while the rest 27[19.6%] are from the urban area. It should be noted here that the mean WHR of the rural subjects was higher than that for the urban subjects.
- Diabetes:** There were only 2 subjects whose serum fasting plasma glucose was greater than 7.8mmol/L. Both of them are men from the urban area.
- Hypercholesterolemia:** 10[3.6%] subjects had fasting serum cholesterol more than 6.2mmol/L. 5[2.5%] and 5[6.4%] were men and women respectively. Six of the 10 subjects were from the rural area whereas 4[2.9%] were urban residents. The mean fasting plasma cholesterol for the study population is 4.71 + 1.32mol/L [Tale 3].

6. **Hypertriglyceridemia:** 2 [0.7%] of all the subjects had plasma fasting triglyceride of more than 3.0mmol/L. Both are men, one each from the rural and the urban areas. This conforms to the low mean value of fasting plasma triglyceride of 1.70 ± 0.58 mmol/L.

Table 2:

Prevalence of Quantifiable Risk Factors

RISK FACTORS	ALL n=276(%)	MALE n=198 (%)	FEMALE n=78 (%)	URBAN n=138 (%)	RURAL n=138 (%)
Hypertension:	53 (19.2)	39 (19.7)	14 (17.9)	23 (16.7)	30 (21.7)
- Borderline					
- Mild	21 (7.6)	11 (5.6)	10 (12.8)	14 (10.1)	7 (5.1)
- Moderate	13 (4.7)	9 (4.5)	4 (5.1)	9 (6.5)	4 (2.9)
- Severe	3 (1.1)	0	3 (3.8)	0	3 (2.2)
Obesity:					
- Lean (<20kg/m ²)	50 (18.1)	32 (16.2)	18 (23.1)	28 (20.3)	22 (15.9)
- Obese (>30kg/m ²)	6 (2.2)	2 (1.0)	4 (5.1)	4 (2.9)	2 (1.4)
Overweight:					
- Male (>27.30kg/m ²)	10 (3.6)	10 (5.1)	0	4 (2.9)	6 (4.3)
- Female (>25.30kg/m ²)	17 (6.2)	0	17 (21.8)	6 (4.3)	11 (8.0)
Truncal Obesity					
- Male WHR (>0.94)	77 (27.9)	77 (38.9)	-	33 (23.9)	44 (31.9)
- Female WHR (>0.87)	67 (24.3)	-	67 (85.9)	27 (19.6)	40 (29.0)
Abnormal FPG / Diabetes					
- FPG > 7.8mmol/L	2 (0.7)	2 (1.0)	0	2 (1.4)	0
High Cholesterol Total					
> 6.2mmol/L	10 (3.6)	5 (2.5)	5 (6.4)	4 (2.9)	6 (4.3)
High Triglyceride					
> 3.0mmol/L	2 (0.7)	2 (1.0)	0	1 (0.7)	1 (0.7)

Table 3:

Anthropometric and Biochemical Features for the Study Population

RISK FACTORS	ALL n=276	MALE n=198	FEMALE n=78	URBAN n=138	RURAL n=138
Weight (Kg)	58.40 ±9.75	59.70±9.06	55.12±10.69	59.11±10.99	57.70±8.31
Height (m)	1.60±0.08	1.62±0.08	1.54±0.06	1.62±0.08	1.58±0.08
BMI (Kg/m ²)	22.81±3.53	22.70±3.18	23.09±4.31	22.43±3.64	23.19±3.39
WC (cm)	81±1.0	80±0.9	82±1.1	82±1.0	79±0.9
HC (cm)	87±1.0	86±0.8	89±1.3	89±0.9	84±1.0
WHR	0.93±0.06	0.93±0.06	0.93±0.05	0.92±0.06	0.94±0.05
dBp (mmHg)	84.64±10.74	83.46±9.99	87.64±12.00	85.49±10.87	83.80±10.53
sBP (mmHg)	137.15±123.89	134.66±22.94	143.46±25.21	140.12±24.65	134.18±22.81
Total Cholesterol (mmol/L)	4.71±1.31	4.67±1.08	4.80±1.83	4.58±1.16	4.84±1.47
Total Triglyceride (mmol/L)	1.70±0.58	1.69±0.58	1.75±0.59	1.63±0.59	1.78±0.57
FPG (mmol/L)	4.08±1.58	3.90±1.61	4.56±1.40	4.42±1.73	3.73±1.34

Table 4:**Correlation/Partial Correlations**

Table 4 shows the relationship between the different CVD risk factors in the study population. Body mass index was significantly related to total cholesterol. BMI is also significantly related to Triglycerides for the rural population. There was a significant correlation between WHR and Triglycerides, Total cholesterol and fasting plasma glucose. These relationships are also seen among males, females, rural and urban subjects studied. The critical value for the correlation coefficient [Cr] for the all the subjects is 0.134.

TABLE 4: showing correlation between Blood pressure and risk factors.

RISK FACTORS n Corr. Coef (Cr)	ALL n=276 0.134	MALE n=198 0.164	FEMALE n=78 0.260	URBAN n=138 0.190	RURAL n=138 0.190
BMI vs dBP	0.10	0.10	0.08	0.02	0.02
sBP	0.03	0.02	0.02	0.18	0.12
FPG	0.05	0.13	0.05	0.16	0.18
T-Chol	0.20*	0.16	0.28*	-0.05	0.41*
TG	0.07	0.16	0.06	0.18	0.30*
WHR vs dBP	0.05	0.04	0.08	0.09	0.03
sBP	0.01	0.04	0.08	0.07	0.00
FPG	-0.18*	-0.07	-0.63*	-0.03	-0.46*
T-Chol	0.14*	0.42*	0.04	0.48*	0.34
TG	-0.14*	-0.18*	-0.01	-0.05	0.30*

Cr – Critical value of the correlation coefficient.

- Significant at $P < 0.05$

Studies from other parts of the country also shows that, the prevalence of hypertension and other risk factors for cardiovascular disease is high in all parts of Nigeria (Obasohan & Ajuyah). The prevalence is higher in urban compared to rural areas of the country.

The high incidence of hypertension and it's complications has been largely attributed to poor medication adherence among the patients. We had looked at the factors that determine medication adherence in Northern Nigeria. We studied this among our patients living with HIV/AIDS.

Mr Vice Chancellor Sir, Please permit me to present a summary of our findings as it relates to treatment adherence.

Factors Affecting Antiretroviral Treatment Adherence in Abuth Art Clinic Kaduna

Introduction

Clinical benefits of ART has been dramatic, fewer people now progress to AIDS. There has been more than 70% decline in age adjusted death rate from HIV/AIDS. Adherence to ART is a major determinant of successful ART programs. Adherence is 2nd strongest predictor of progression to AIDS and death after CD4 count. Suboptimal adherence results in treatment failure. Failure can be clinical, immunologic or virologic, long term viral suppression requires a near perfect adherence Drug-resistant strains of HIV are selected through ongoing replication in the presence of suboptimal ART.

Infection with such strains leaves fewer treatment options from the outset

Other determinants of ART failure or success include :-

- genetic differences in drug metabolism
- severe baseline immune suppression
- prior drug resistance and
- concurrent opportunistic infections.

Adherence to ART, however, is one of few potentially alterable factors determining outcomes for patients with HIV.

Medication adherence

The extent to which a patient takes a medication in the way intended by a health care provider.

Adherence and non adherence are meant to be

Nonjudgmental statements of fact rather than expressions of blame toward the patient or provider.

Non adherence to medication, in general, is very common.

Typical adherence rates for medications prescribed over long periods of time are approximately 50-75%.

Poverty and adherence:-

Direct effect of poverty on adherence is not adequately documented.

Wide ART access is recent in resource poor settings such as Nigeria and other developing countries. Biomedical research rarely examine the biosocial context in which patients live.

Burdens substantiated by previous workers include:-

The cost of missing work, the cost of transportation to a health centre, the cost of user fees and cost of tests and supplies .

Adherence Measurements

This can be achieved by:- patient's **self-report** of pill-taking behavior or measures that are **objective surrogates** of pill-taking behavior(**pill count, MEMS caps-medications event monitoring system**)

General objective:-

To understand the social factors affecting antiretroviral treatment adherence in ABUTH Kaduna.

Specifically:-

- *To explore factors such as Social and personal experiences ,*
- *Effects of Stigma,*
- *Disclosure and Support ,*
- *Effects of Psychosocial Concerns, eg depression, psychosis, isolation,*
- *Effect of the use of Alternative/Complementary Medicines*
- *Patient knowledge of his conditions*
- *a good understanding of ART and*
- *Geographic access*

On patient's adherence to ART

Methodology

The study was a descriptive cross-sectional study

A patient must have been on the treatment for at least six months before they qualify to be enrolled for the study.

The list of all People Living With HIV/AIDS(PLWHA) on treatment constituted the sampling frame,

The sample size for the study at 95% confidence allowing for 5% degree of accuracy was calculated to be 73

An error margin of 10% was considered to cover for:-
invalid questionnaires, non response and other issues related to data collection,

This made up the sample size to 80 PLWHAS.

Sample selected using simple random technique

Inclusion criteria

- Ambulant person on ART for a minimum of 6 months.
- Has to be 18 years or over, male/female who gives an informed consent for the study
- Should not be moribund and
- Should not be a volunteer

Exclusion criteria

Those excluded from the study are:-

- Moribund patients
- Those with serious illnesses requiring admission
- Children and
- Volunteers

Questionnaires were administered by self or by a trained staff.

Limitations of the Study

- Problems of recall, for drugs missed or taken late
- It was difficult to ascertain some problems at home that affect compliance as the data was collected in the clinic.
- ?Reliability of the information
- A cross sectional study like this one may not unravel all the factors affecting compliance, an ethnographic study probably prospective, employing other modalities of assessing compliance such as the pill count or the Medication Event Monitoring System(MEMS) may yield a more useful data.

Results

A total of eighty (80) questionnaires were administered to PLWHA. Seventy three (73) questionnaires were valid and used for the study among those returned.

Thus 73 PLWHA's (28males and 45 females) participated in the study.

TABLE 5
Age – Sex Distribution of Respondents

AgeGroups Yrs	Gender		TOTAL	%
	Male	Female		
20-34	13	24	37	50.7
35 – 49	14	20	34	46.6
50 – 64	1	1	2	2.7
TOTAL	28	45	73	
%	38.4	61.6		100

Forty five (62%) are aged 20 – 49years, 3% of them aged 50years and over.
 42 (57.5%) respondents had completed secondary school
 22(30.1%) had completed post secondary education.
 Seventy (95.9%) reside in Kaduna state
 Most respondents are gainfully employed
 28 (38.4%) respondents however reported that, they had no income generating job.

Adherence assessment

Fourteen (19.2%) respondents reported missing pills during the interview.
 Compliance rate of 80.8%.

Knowledge of the Antiretroviral drugs among respondents

Fifty five (75.3%) have correct knowledge of the drugs they are taking. This was assessed by their ability to name or identify their drugs and state how exactly they take each drug every day.

TABLE 6- Knowledge of drugs

Knowledge of drugs	No	%
Correct	55	75.3
Incorrect	6	8.2
No response	12	16.4
Total	73	100

Table 6 shows the result of assessments of the respondent's knowledge of the ART. This was assessed by naming the drugs or identifying the packets. Respondents are then asked to explain how the drugs are taken. Fifty five respondents demonstrated correct knowledge of the ART while 12 respondents did not respond. Six respondents could not demonstrate good enough knowledge of the ART.

Adherence Assessment

Adherence was assessed using the 3 day recall and among the respondents 1(1.4%) reported missing a dose the previous day, 3(4.1%) reported missing pills 2 days prior to the interview. Among the reasons given for missing doses are:- Drugs got finished, forgetting to take the pills, travel, lack of money, too much work and slept off due to tiredness. Most of the missed pills (35.7%) were due to drugs getting finished. Twenty six (35.6%) of respondents reported ever missing pills due to shortage of supply.

TABLE 7-Missed Pills yesterday (a day before interview)

Response	No	%
Yes	1	1.4
No	72	95.9
Total	73	100

Table 7 assesses the number of people who missed pills a day before the interview. One respondent missed pill a day before the interview.

TABLE 8-Missed Pills two day before interview

Response	No	%
Yes	3	4.1
No	70	95.9
Total	73	100

Table 8 shows missed pills two days before the interview. Seventy respondents which is upwards of 95% did not miss any pill 2 days before the interview.

TABLE 9-Missed Pills 3 days before interview)

Response	No	%
Yes	10	13.7
No	63	86.3
Total	73	100

Table 9 shows that up to 86% of respondents did not miss pills 3 days before the interview. Ten respondents indicated that they missed pills 3 days before the interview.

TABLE 10- Missed Pills last month

Response	No	%
Yes	5	6.9
No	68	93.1
Total	73	100

Table 10 shows how many respondents missed pill in the last month before the interview. More than 90% of the respondents did not miss pill in the last one month. This question was put to those who reported not missing any dose in the three days preceding the interview.

TABLE 11-Reason for missing pills

Response	No	%
Drug got finished	5	35.7
Forget	3	21.4
Traveled	2	14.2
Lack of money to buy	1	7.1
Slept off, too tired	2	14.2
Too much work	1	7.1
Total	14	100

Table 11 shows the various reasons given by those who missed pills. Mostly the reasons given include drugs got finished, forgetting, and lack of money to buy drugs among other reasons.

Twenty eight (38.4%) had experienced side effects from the medication which included: diarrhea, dizziness, hunger after taking

drugs, nausea, rashes and body pains. This did not however make them to discontinue drugs as only 5(6.8%) had to stop drugs because of side effects.

This compliance rate is comparable to reports from South Africa (87.2%), United States (63%), Ivory Coast (58%) and Spain (58.8%).

HIV Status Disclosure

Sixty (82.2%) had disclosed their status to someone else

The disclosure was to family members mainly such as brothers, husband, mother, wife, parents and the like.

Disclosure brought feeling of relief in 17 (28.3%) respondent, 11(18.3%) felt indifferent after disclosure while 6(10%) felt ashamed of themselves.

Reasons given by those who did not disclose their status include; to avoid stigmatization, fear of discrimination and wanting to keep it secret.

Poverty and adherence to ART

Apart from money for ART, respondents indicated that they need money for food, transport to the health facility, vitamins and other needs.

In spite of these, 48(65.8%) said there are times they do not have the N1000=00 for ART at the clinic.

Distance from home to clinic as a determinant of adherence

While some reside inside Kaduna town others had to travel 80-100km (a journey that takes 1-2 hrs by bus to access the treatments).

43 (58.9%) travel for between 1 &2 hours to reach the clinic for drugs.

The fact that over 60% of respondents report that there are times they do not have the N1000 for ART further confirms the fact that poverty significantly affects access to ART in our setting.

Discussion

ART has transformed HIV infection into a stable chronic condition.

The need to continue treatment for decades rather than years calls for a long-term perspective of ART.

Adherence to the regimen is essential for successful treatment and sustained viral control.

Reasons for non-adherence

Many reasons are given worldwide, these include:-

- pill fatigue,
- side effects and
- decrease in severity of disease.

Reasons proffered by respondents for their inability to adhere include

- non-availability of drugs (35.7%),
- forgetfulness (21.4%),
- lack of funds (7.1%),
- busy schedule (7.1%) and
- travelled (14.2%).

These reasons are similar to the reasons reported by Z. Iliyasu et al in Aminu Kano Teaching Hospital, Kano

Poverty and adherence

Our respondents indicated that they need money for food, transport to the health facility, to buy vitamins and other needs in addition to the money needed monthly for ART.

This is coupled with the fact that most of our respondents are the primary breadwinners in their families.

Way forward

Addressing adherence may require:-

- Providing social support to patients;
- Lowering or eliminating user fees;
- Bringing health care workers closer to patients;
- Opening health centres focused on patients' competing demands to survive;
- Improving drug procurement strategies, and

- Creating mechanism for lowering the cost of drugs and laboratory services.
- Way forward
- This will in many cases, mean improving and investing in primary health care, public Hospital, and referral networks.
- There is also need to recruit and retain health care workers committed to serving their patients.

Conclusion

In view of this complex interrelated factor, the possibility of advancing the understanding of the multifaceted causes of non adherence needs to be analyzed within its larger social, economic and political context.

Mr Chairman Sir, we had also reviewed the literature on a very important reason why people with hypertension may not stay on the prescribed treatment, especially the male patient. This problem is the problem of Erectile dysfunction. Permit me Mr Chairman to present a summary of our findings:-

Sexual Dysfunction In Hypertensive Patients: Implications For Therapy

Sexual dysfunction associated with hypertension or antihypertensive therapies may impact the ability of patients to stay on therapy and lead to deterioration in patients' quality of life.

Penile erection, occurs in response to the activation of proerectile autonomic pathways, this greatly depends on adequate inflow of blood to the erectile tissue and requires coordinated arterial endothelium-dependent vasodilatation and sinusoidal endothelium-dependent corporal smooth muscle relaxation(Anderson & Wagner 1995). Nitric oxide (NO) is the principal peripheral proerectile neurotransmitter that is released by both nonadrenergic, noncholinergic neurons and the sinusoidal endothelium, to relax corporal smooth muscle through the cGMP pathway (Azadzoi 1992, Ignarro 1990), resulting ultimately in increased intracavernosal blood flow and pressure(ICP). This increase in ICP activates pressure-dependent veno-occlusive mechanisms to limit the outflow of blood, thus further promoting elevated ICP and erectile response. The increased blood flow is thus ultimately driven by the force of the arterial pressure. Any factors

modifying the basal corporal tone, the arterial inflow of blood to the corpora, the synthesis/release of neurogenic or endothelial NO within the corpora and/or the veno-occlusive mechanism are prime suspects for being involved in the pathophysiology of ED.

Therefore, it is important for practitioners to become familiar with the wide variation in sexual side effects produced by antihypertensive agents and to discuss the potential occurrence of these side effects with their patients. In many cases, a change in the patient's drug regimen may help patients overcome specific sexual side effects experienced with certain drugs. Practitioners should consider selecting an antihypertensive therapy that is highly effective in lowering blood pressure and at the same time preserves patients' quality of life. The effect of medications on sexual function remains controversial. Some blinded trials report little difference between placebo and specific medications, whereas other studies indicate that antihypertensive medications increase sexual dysfunction, which has an impact on quality of life. Recent evidence suggests that losartan, an angiotensin II antagonist, is not typically associated with development of sexual dysfunction and may actually positively impact several indices of sexual function (erectile function, sexual satisfaction, and frequency of sexual activity) as well as perceived quality of life. Thus, angiotensin II antagonists may offer a therapeutic option to prevent or correct erectile dysfunction in patients with hypertension. The favorable effects of these agents on sexual function may be related, in part, to their ability to block angiotensin II, which has recently become recognized as an important mediator of detumescence and possibly erectile dysfunction.

Heart Diseases of Interest in Nigeria

Mr. Vice Chancellor Sir, before I conclude, I will want to touch a little about 2 other heart disease that are relevant to our practice in Nigeria today.

i. Peripartum Cardiac Failure (PPCF)

The syndrome of peripartum cardiac failure (PPCF) has been described in the American Negro since the 1930s. It was first described in Nigeria from Zaria in 1974 by Prof. E. H. O. Parry and his colleagues in A.B.U Teaching Hospital Zaria. The only other place PPCF was described then was in Ibadan, South-West

Nigeria. This is a syndrome of heart failure that comes on some weeks before delivery or within six months of child birth. The syndrome was found to be common in the areas of Hausa majority mostly around Zaria and Malumfashi, where post-partum practices of taking hot baths, lying on hotbed, and taking large amounts of Kanwa (a lake-salt rich in sodium) are pursued with great vigour. These customs impose a critical load on a vulnerable myocardium with consequent heart failure. It seems that tribe and tradition could well explain the high incidence of PPCF around Zaria.

In our cardiac clinic today, sir, 70-80 percent of our patients are women and majority of them started coming to the clinic as a result of pregnancy/childbirth related heart diseases. The commonest ailment seen in our clinic being hypertensive heart disease, rheumatic valvular heart disease, peripartum cardiomyopathy and other forms of cardiomyopathies such as caused by HIV/AIDS.

Mr Vice Chancellor sir, permit me to share a summary of our report of a fatal case of a woman who came to our hospital in labour with hypertensive heart failure.

CASE REPORT-Hypertensive heart failure presenting in Labour

S.L. a 30yrs old woman (para⁰⁻¹) was referred from a peripheral clinic in labour after nine (9) months gestation, with symptoms of pulmonary oedema to our centre. She had booked in the same clinic at the gestational age of 5 months, with no apparent problem. She was noted to have developed high blood pressure about a month before referral to us. She had a laparotomy for ectopic pregnancy 10 years prior to presentation.

This pregnancy is the second in 10 years. No family history of hypertension, diabetes, or sudden non-mechanical death.

Physical findings on admission include:- respiratory distress (RR=40/min). mild central cyanosis, bilateral pitting pedal oedema, tachycardia of 126 beats per minute, displaced apex beat to the left 6th intercostals space, lateral to midclavicular line, raised jugular venous pressure (JVP), loud A2 component of S2 and a third heart

sound. She also had widespread bilateral crepitations at the lung bases. She had an enlarged tender liver 6cm below the right costal margin with a span of 16cm. Fundoscopy was not done.

Her blood pressure was 190/120 mmHg. Her abdomen was gravidly distended with intermittent uterine contractions. She was also confirmed to be in labour by the attending obstetrician and gynecologist, the cervical os was 6cm dilated and the cervix was fully effaced. She was conscious and oriented. An impression of acute pulmonary oedema from hypertensive heart failure was made. She was started on furosemide 120mg intravenously (i.v) stat, then 80mg given i.v. every 12 hours, intermittent hydralazine given as 20mg i.v slowly over 10 minutes stat, then 20mg slowly, 4 hourly till diastolic blood pressure became less than 110mmHg, oxygen by face mask, intravenous ceftriazone 1gm daily and intravenous bolus of 50% dextrose 30ml stat. Her blood pressure was 180/120mmHg, 8 hour after admission. She was being assessed by the gynaccologist regularly to assess the progress of labour.

Urinalysis showed no proteinuria, urine microscopy result showed no red cells, 2-4 white cells per high power field and no casts. Her random blood sugar was 7.4mmol/litre, blood count showed packed cell volume of 39%, a normal white cell count of 4100 with neutrophils of 58% and lymphocytes of 42%. Urea was 8.4mmol/l. Na^+ 140mmol/l, potassium 4.0 mmol/l, chloride 98 mmol/l, bicarbonate 24mmol/l and creatinine 90 $\mu\text{mol/l}$. She made 1500 ml of urine in the first 6 hours of admission. Her condition remained poor. After 12 hours on admission, the patient died. The fetal heart sounds could not be picked 2 hours before she died.

Discussion

Cardiovascular disease is an important non-obstetric cause of maternal death. The physiologic changes in cardiovascular system during pregnancy influence cardiac disease in different ways. The mechanism involved in arterial hypertension and pre-eclampsia of pregnant women are presently very well known, including genetic causes, alterations on the rennin-angiotensin systems, imbalance between vasoconstrictor and vasodilator agents derived from endothelial activity of the spiral arteries of the placenta, such as prostacylins, thromboxane A2, Nitric Oxide and endothelin-1 among othes.

Pre-eclampsia is usually defined on the basis of new onset hypertension and albuminuria developing after 20 weeks of pregnancy. Our patient does not classically satisfy the criteria for the diagnosis of pre-eclampsia, but since this is the first diagnosis of hypertension in her and her clinical course did not allow for full evaluation, she might actually have been pre-eclamptic since women with no proteinuria. But who do have hypertension and other features such as severe headaches, thrombocytopenia, hyperuricaemia, disordered liver function and fetal compromise are likely to have pre-eclampsia.

The placenta is the key factor in inducing pre-eclampsia and its expulsion during delivery or caesarian section is the definite cure of the process. In our patient, the delay in referral and the fact that she had severe pulmonary oedema made it impossible to contemplate caesarian section because both general and epidural anesthesia have risks of severe side effects in such circumstances. Our patient was placed on hydralazine in addition to the treatment for pulmonary oedema. She however did not do well and died 12 hours after admission. The reason for the loss of this patient and the fetus are clearly linked to the delayed referral since the clinical, biochemical and haematologic manifestations of pre-eclampsia are very typical facilitating early and easy diagnosis.

Congestive cardiac failure and other cardiovascular conditions such as severe cardiac dysfunction, pulmonary hypertension, Marfan's syndrome, severe obstructive lesions of the left side of the heart etc all place the mother and the fetus at extremely high risks. Women with such conditions should be encouraged to avoid pregnancy and the interruption of pregnancy (in those already pregnant) may be advisable in cases with great risk of disability or death. Early referral in this case of this patient would have allowed proper evaluation and appropriate counseling of the patient.

Hypertensive heart failure is rare during labour largely due to advancement made in both hypertension and heart failure management. The practice of ante-natal care also picks out and properly manages all at risk pregnant women. Acute congestive cardiac failure had been reported in a hypertensive women receiving salbutamol for premature labours.

Mortality from such cases can be reduced significantly if all cases of hypertensive disorders in pregnancy are referred early to a specialist centre which has full complements of specialty practices required by such pregnant women.

ii. **Takotsubo cardiomyopathy**

Mr. Vice Chancellor Sir, esteemed guests, permit me to briefly talk about a kind of heart disease that had been with us, but got little attention. Tako-tsubo is a Japanese term meaning octopus trap. This is a special trap that looks like a pot that is oblong(Figure 3). It is use to trap octopus, because octopus only goes forward it does not move backward, so after entering, the octopus is trapped inside. The shape of the trap is similar to the appearance of the left ventricle which balloons at the apex in patients with the form of cardiomyopathy. It was first described in Japan in 1991.



Figure 3- Octopus trap

This cardiomyopathy is also called by other term like:-

1. Stress-induced cardiomyopathy
2. Transient left ventricular ballooning syndrome
3. Apical ballooning syndrome and
4. Broken heart syndrome

Takotsubo cardiomyopathy is characterized by transient apical and mid- left ventricular dysfunction in the absence of significant coronary artery disease that is triggered by emotional or physical stress. Typically normal left ventricular function recovers with 1-4 weeks.

This type of heart disease had been confused with acute coronary syndrome (heart attack) even in developed countries. It may lead to death in up to 8 out of 100 persons affected. It is much more common in women (up to 90%) and more than 80% of cases are postmenopausal women.

Typically the disease is triggered by some events:-

- Death of a loved one
- Devastating financial losses
- Natural disasters
- Physical illness and/or
- Other catastrophic news

This, Mr. Vice Chancellor Sir, brings me to the long held belief among the Hausa community that one can “hadiye zuciya” and die. Truly if the above triggers are interpreted into our setting, then the phenomenon of sudden death from tragic news, an unpleasant happening or certain circumstances that are not socially, culturally and morally acceptable could well be appropriately classed as tako-tsubo cardiomyopathy. We have not been able to describe it adequately and report to the world because we lack the necessary tools to make adequate diagnosis. Echocardiography which is the main stay of diagnosis of this condition became widely available within the last 10 years in Nigeria.

Mr. Vice Chancellor Sir, even with the advancement of the west, takotsubo cardiomyopathy was not described there. It took power of observation and abstraction of the Japanese to describe the syndrome in 1991. This underscores the power of being very observant and creative in the art of medicine.

I can recall, just like most health care professionals in Nigeria and indeed the general public would recall, a case or cases, that if subjected to evaluation would fit into this syndrome in our practice.

The postulated reason for this syndrome includes release of excess hormones of fight and flight by the affected persons, among other hypotheses.

Patients who are suspected to have this type of disease must be managed optimally and urgently. They must be supported and as much as possible the stress should be removed (in this light, I am sure the social scientist will agree with me that the reason why we do not have a lot of this is because of the nature of our family life which provides a lot of support as at when due).

Overall, the outcome is good if the patients survive the acute phase and long term prognosis is excellent.

HIV/AIDS and the Heart

Mr. Vice chancellor sir, permit me to talk about a topic that is difficult to ignore in the medical practice of today. Over the last three (3) decades, HIV/AIDS had modified the practice of medicine in virtually every specialty.

HIV stands for "Human Immunodeficiency virus" and AIDS stand for "Acquired Immunodeficiency Syndrome". Basically what this Virus does, is to destroy the central command in the body defenses with consequent affectation of the body by ordinary and opportunistic disease. Ordinary diseases such as Malaria, Pneumonia, Typhoid e.t.c. Opportunistic diseases such as candidiasis and opportunistic malignancies. The heart and cardiovascular system being part of the body is also affected by HIV/AIDS disease.

In the wake of the epidemic in Nigeria, with the high prevalence and the limited access to antiretroviral therapy, the dominant forms of HIV associated heart diseases were pericardial tuberculosis, cardiomyopathy and pulmonary hypertension. The fight against the HIV/AIDS epidemic in Nigeria and Africa was aided by support from the international community, notably the USA presidential fund for HIV/AIDS (PEPFAR). Now patient with HIV/AIDS are living longer with highly active antiretroviral therapy (HAART), so much so that HIV/AIDS has now become a part of the chronic disease burden just like hypertension and diabetes. HIV/AIDS related cardiac disease represent a diagnostic and therapeutic challenge in clinical practice; cardiologist are more frequently encountering this problem. An intimate knowledge of

opportunistic infections affecting the heart, effects of long term HAART therapy and effects of therapy for opportunistic infections on the heart is needed to be able to formulate a differential diagnosis. Effects of HAART therapy, especially protease inhibitors on lipid and glucose metabolism and their influence on progression to premature vascular disease require considerations. Treatment of cardiac disease in HIV/AIDS patients can vary from non-HIV patients, based on drug interactions, differences in responsiveness, and other factors.

Mr. Vice Chancellor Sir, esteemed guest, the problems posed by HIV/AIDS to physicians is further compounded by our cultural beliefs, social practices and family values and interactions. A lot of people till today do not believe in HIV/AIDS, this at a point included our learned religious leaders, traditional rulers and even some members of the academic community. This lead to a galore of deception of people afflicted with HIV/AIDS in the belief that they can get a "cure". The attitude of people including health care workers towards People living with HIV and AIDS (PLHA) complicated the experiences of PLHA in Nigeria and most of Africa.

Mr Vice Chancellor Sir, ladies and gentlemen, permit me to share a summary of our research findings on the Sexual and family planning practices and needs of PLWA in Nigeria. This study was supported by a travel fellowship to the University of Witswatersrand in South Africa, where I was trained in research methods and Sexual and reproductive health. The grant was secured by dRPC Kano from the Institute for international education, San Francisco, USA.

Sexual and Family Planning Practices and needs for PLWHAs in Nigeria – a rapid ethnographic assessment

Introduction

Ethnography is a Greek word :- ethnos-nation/race and graphe- writing

It is the study of a small group of people describing what they do , how they do it and why they do it. PLWHA stands for people living with HIV/AIDS one third of the world's population is between 10-24yrs

Four fifth(80%) young people live in developing countries, this is expected to reach 87% by the year 2020.

In most countries most young people are sexually experienced by age 20 years. Pre-marital sex has been shown to be common among the 15-19 year olds. Pre-marital sex happens in 73% of young men and 28% of young women in *Rio de Janeiro*; 59% and 12% respectively in *Quito* and 31% & 47% respectively in *Ghana* –Population Council, 1996

Design/Setting

- Qualitative approach
- Focus Group Discussion and Group interviews
- Selective in depth interviews
- Over a period of three weeks
- Two associations of PLWHAs namely *Living with Hope* and *aids alliance Nigeria* were interviewed
- Officials and members were interviewed

Findings- PLWHAs

- Most are worried about life
- Unhappy about circumstances of their diagnosis
- Loose confidence after learning of status
- Most loose hope on life
- Most are not empowered
- Worried about fellow PLWHAs sacked from their jobs based on serostatus
- They would like to have children... but
- How are they going to look after them?.. some asked
- Men's attitude to their wives is worrying especially if the woman's status is known first
- Some send the wives away and refuse to get tested themselves
- PLWHAs believe that poverty and polygamy are the main reasons for the continued spread of HIV
- Literacy levels and socio economic status influence perception and ability to cope with being HIV positive
- Low education level is associated with misconception about HIV and losing hope on life.

- Low socioeconomic status determines to a large extent the *health seeking pattern, increased frequency of infections and hopelessness* of PLWHAs
- Most PLWHAs are exploited by other people and “healthcare workers” – *orthodox or otherwise*
- Most PLWHAs want to have children.. *to be remembered!!!*
- No specific sexual or reproductive health program for PLWHAs
- Most are not well informed about safe sex practices and planned pregnancy
- The females are unable to decide on sex... is the exclusive reserve of the man!!!
- Most PLWHAs especially of low education and socioeconomic status believe that pregnancy cannot be planned.
- They believe that unwanted pregnancy can always be aborted
- None of them could explain what is safe or unsafe abortion
- Little knowledge of STIs and HIV/AIDS information
- Most are not aware of family planning methods, few know about male condoms
- Few (less than 10) know or heard of the female condom
- Fears and misconception about condoms e.g may get missing inside the woman
- Female condom is not popular due to high cost, unavailability and the few who know it don't know how to use it
- Levels of education plays a significant part in the KAP of condoms
- Very few PLWHAs are familiar with other family planning methods such as the pill, loop and the injectable
- There is a strong believe about the natural ways of birth control... *cultural and religious influences*
- Worried about the distribution modality, availability and accessibility of ARV in the country

PLWHA associations.

Living with hope and aids alliance Nigeria

- Membership around 300 and more than one thousand respectively
- Regular meeting and programs
- Education on HIV/AIDs and healthy lifestyles for members
- Vocational training for members though limited by finances
- Psychological support for members
- Home based care for members who are down
- HBC is expensive and the associations have difficulties
- Members are being exploited by those in ARV distribution system
- Most members cannot access the FG ARV drugs
- Members maltreated in clinics
- No enabling law to strengthen their course
- Need for an enabling law to help PLWHAs fight for their rights
- Need for enabling law to protect them from exploitation by 'medical staff' such as inexperienced practitioners who administer wrong treatments to them
- Members complain that NGOs and government agencies use them to showcase HIV/AIDS problem without any benefit for the members
- Feels that there is no genuine effort by any agency in their interest

Identified patterns

- State of despondency and hopelessness
- Mostly PLWHA are not empowered
- Knowledge and perception of male condom is very poor
- Education and socioeconomic class determine attitude and believes of the PLWHA
- Poor KAP on sexual issues e.g safe sex, condom use, STIs, and safe abortion
- Most PLWHA's expres the desire to have children
- Deep seated negative belief about condom

- Hopelessness leads to PLWHAs resignation to their fate, not willing to take on jobs, and thus unable to take care of themselves.

From our findings, we suggested ways forward that may help solve some of these concerns.

Suggested Programmes

Empowerment Programmes:-

- To change views of PLWHA's, about life
- Being HIV positive is not the end of life
- Their despondent attitude and hopelessness should be addressed.

Condom awareness and promotion:-

- For both males and females
- Consistency of condom use is very difficult to achieve.
- Programs should examine ways of increasing use and consistency of condom
- Behaviour Change Communication (BCC) should be used to encourage safe sex practices.

Awareness(recognition), prevention and management of STIs

- Peer education
- Condom awareness and promotion
- Presumptive treatment of STIs with antibiotics.

Prevention of mother to child transmission(PMTCT)

- Exploring different ways to involve men more actively in the counseling and care of pregnant women.
- Testing strategies for mobilizing communities to support Mother to Child Transmission (MTCT) programmes.
- Program for counselor training strategies.
- Programmes

Integrating Family Planning and HIV/AIDS programmes.

- Reduce the stigma about people going to receive care,
- A clinic that is strictly for PLWHA or for HIV/AIDS care is likely to be shunned.
- Integrating the services with other fairly acceptable service will increase the chances of acceptance and patronage.

Conclusion

The challenges of being a doctor in a developing world is enormous, this is largely due to the gap between the level of practice in his part of the world and the literature by which he is to be guided. This is further compounded by the dearth of practitioners who are “called” to practice the art of medicine(calling here meaning the inherent commitment to the art of medical practice). Thus, it is common place to see a health care worker struggling to find textbook description of condition that is not validated for his region of practice.

A typical example in my specialty is the case of a patient who had an electrocardiogram (ECG) done and the machine (made in Europe/USA) diagnosed acute coronary heart disease/myocardial infarction. The health care worker informs the patient that he has heart attack, when his heart is perfectly working. The patient is left confused and devastated, knowing fully well that a ‘heart attack’ in our environment equates death. This underscores the eternal relevance of the human components in healthcare delivery. A Physician with the right knowledge and skills will at least be 80% correct in diagnosis without depending on results of diagnostic gadgets.

The doctor is again, in an environment that hardly regulates medical practice (both modern and traditional). Therefore the doctor must be prepared to deal with complicated cases and cases that are improperly managed. He should be ready to deal with the side effects of both modern and traditional medicines. This is the reality of today in our health care system.

The patient is faced with the big issue of desiring “state of the art” health care at least for those who can afford. This opens the door for exploitation in the name of medical tourism. Nigerians had spent much more that is required to revamp our health sector, in the name of going for treatment in other countries. The results of such escapades are mixed with some successes but at the same time most people would travel, spend the money and still have to come home with the same condition or worse off.

Mr Vice Chancellor Sir, you may have noticed that, the works I presented today were carefully selected based on the qualitative nature of the research work carried out, because it is my belief that a doctor needs to understand the social, economic,

cultural and religious environments of his patients, in order to make a success of medical practice. It is my opinion, that research works in our practices **MUST** have a qualitative outlook because as the social scientist would say, 'man is a social animal' with behaviors and practices that need to be understood well, especially in the practice of Medicine.

Mr Vice Chancellor sir, distinguished listeners, the practice of medicine and especially cardiology in our country will not have completed its mission until its main spirit and outlook permeate every practitioner of it:

- That medicine is a humane art, enriched by years of sacrifices and that it deals kindly with all,
- That it is a wise art that addresses the whole dimension of life and living experience and
- Finally, that character counts far more than other virtues among its practitioners.

Thank you for your attention.

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